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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,514	01/15/2004	Michael Stanek	2003_1861A	4611

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EXAMINER

BOYKIN, TERRESSA M

ART UNIT PAPER NUMBER

1711

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/757,514

Applicant(s)

STANEK ET AL

Examiner

Terressa M. Boykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1-2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by USP 6600011 see col. 1 lines 5-65, col. 4 lines 20 through 55 col. 5 through col. 6 line 67, col. 10 through col. 11 line 35, example 1 and example 3c.**

Applicants' invention relates to a drying process for polymers containing N or amine, ammonium or spirobicyclic ammonium groups, comprising cationic groups containing N, in addition to suitable counterions, whereby the gelled-out polymers are obtained through polymerization and cross-linking and optionally by alkylation using a gaseous medium under normal pressure or overpressure in a fluidized bed.

**USP 6600011** discloses a method for purifying and drying a polymer hydrogel based in part upon the discovery that rapid drying of polymer hydrogels can eliminate the problem of unacceptable levels of soluble oligomers caused by prolonged thermal treatment. Rapid drying techniques allow drying hydrogels containing more water than was previously considered possible without a loss in product quality.

With regard to applicants' claims 2, 3, 4, 5 and 6, note Example 3c wherein the reference discloses specifically a method of drying the gel by a fluidized bed:

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Water wet gel (9.88 kg, residual moisture 97.2%) was charged to a Glatt GPCG-5 fluid bed drier with 22 liter bowl. The dryer was run with an inlet temperature of 29.degree. C., increasing to 78.degree. C. over 2 hours 24 minutes. Air flow was 150 cfm, increasing to 230 cfm after 88 minutes and to 300 cfm after approximately 2 hours. At this point the powder agglomerated and had to be broken up before further processing. Residual moisture in the product was 43% at this stage. After 70 minutes more drying with an inlet temperature of about 60.degree. C. and an outlet temperature of 40.degree. C. and air flow of between 220 and 160 cfm the product was discharged with a residual moisture level of 3%.

The reference's claim 1 discloses a method for purifying and drying an organic polymer hydrogel, the method comprising: a) washing the polymer hydrogel with a water wash medium until the measured conductivity of the resulting slurry comprising the hydrogel and wash water medium is less than about 5 mS/cm; and b) spray drying the resulting slurry.

With regard to the pressure, the reference states therein that the feed pressure of the slurry as distributed to the drying vessel is greater than about 15 bar (gauge). More preferably, the feed pressure of the slurry distributed to the drying vessel is between about 18 and 40 bar (gauge). Feed temperatures are product specific and depend in part upon the properties of the polymer hydrogel and also upon the extent of drying required. A feed temperature should be chosen that is below the glass transition temperature of the hydrogel and that will not thermally degrade the material. Preferably, the feed temperature of the slurry as distributed to the drying vessel is between about 10 C. and 100 C. More preferably, the feed temperature of the slurry distributed to the drying vessel is between about 15 C. and 80 C., such as room temperature. Preferably, the gas input temperature to the drying vessel is between 100 C. and 400 C. More preferably, the gas input temperature to the drying vessel is between 150 C. and 350 C.

With regard to applicants' claim 7 note above under Example 3c which specifically mentions that the airflow was 150cfm, increasing to 230 cfm after 88 minutes to 300 cfm after approximately 2 hours.

The reference states in the specification that negatively charged counterions may be organic ions, inorganic ions, or combination thereof. The inorganic ions suitable for use

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in this invention include the halides (especially chloride), phosphate, phosphite, carbonate, bicarbonate, sulfate, bisulfate, hydroxide, nitrate, persulfate, sulfite, and sulfide. Suitable organic ions include acetate, ascorbate, benzoate, citrate, dihydrogen citrate, hydrogen citrate, oxalate, succinate, tartrate, taurocholate, glycocholate, and cholate. The polymer salt is preferably the hydrogen chloride salt and can include low salt or reduced salt forms of the polymer where, for example, the salt is present in an amount between about 4% and 30% based upon weight of polymer. Another example is sevelamer, which is stored and administered as a salt in which about 40% of the amine groups are protonated as the hydrochloride salt (about 18% by weight of the polymer is chloride). Another example is poly(allylamine) wherein about 9.0% to about 27.0% of the amine groups in the poly(allylamine) are protonated, such as poly(allylamine hydrochloride) where between about 4.0% and about 12.0% of the polymer, by weight, is chloride anion.

In some cases the polymers are cross-linked after polymerization. One method of obtaining such cross-linking involves reaction of the polymer with difunctional crosslinkers, such as epichlorohydrin, succinyl dichloride, the diglycidyl ether of bisphenol A, pyromellitic dianhydride, toluene diisocyanate, and ethylenediamine.

Thus in view of the above, there appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

### **35 USC 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over **USP 4423016** see abstract, claims.

With regard to claim 8, the reference discloses a process prepared from the same components as claimed by applicants except for the particular apparatus part employing a double pendulum flap via anibbler or a static sieve with a rotor.

**USP 4423016** discloses a process using a fluidized bed for drying a polymer product. Particularly, **USP 4423016** discloses that, in general, a conventional feeding element *is*, for example, a *double pendulum flap* or a rotary blade gate valve. Thus, since it is clear from applicant's specification and claims that the gel polymers are fed to a fluidized bed, such use for a double pendulum flap lends no novelty or unexpected step to the process but is instead merely a functional means for accomplishing said step.

Consequently, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a double pendulum flap as the means for feeding the polymer gel or other products therein in order to complete the process as claimed.

### Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial

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**sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is ( 571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb



Examiner Terressa Boykin  
Primary Examiner

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